The Thesis Committee for Navdeep Kaur Sokhey

Certifies that this is the approved version of the following thesis:

The Women (and Men) Who Speak Funnyi: Negotiating Social Meanings through Palatalization of the Cairene Nasal

APPROVED BY

SUPERVISING COMMITTEE:

Supervisor: _____

Kristen Brustad

_____

Megan Crowhurst

The Women (and Men) Who Speak Funnyi: Negotiating Social Meanings through Palatalization of the Cairene Nasal

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Navdeep Kaur Sokhey, BA

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Abstract

The Women (and Men) Who Speak Funnyi: Negotiating Social Meanings through Palatalization of the Cairene Nasal

Navdeep Kaur Sokhey, MA

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Supervisor: Kristen Brustad

Recent works on palatalization in Cairene Arabic have focused on the social meanings and phonology of certain palatalized consonants in the Cairene phonetic inventory (Haeri 1996, Geenberg 2012, Watson 2007). The consonants whose social meanings have thus far been discussed in sociolinguistic works include the coronal stops /t, d/ and their pharyngealized variants /tˤ, dˤ/. The coronal nasal /n/ has been noted to undergo palatalization in Cairene Arabic and its phonological conditions have been briefly mentioned (Geenberg 2012, Al-Saqqaf 1999), but no social perceptions have been examined for this palatalized variant. This paper is a preliminary attempt to acoustically describe and document the occurrences of the palatalized nasal and its relationship to the use of /t, d/ in 3 speech contexts in Cairene Arabic. It further explores the notion that palatalization of /n/ may contain iconic values that can be used strategically in conversations by its speakers to assume certain 'expressive postures' (Haeri 1996).

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Chapter 1. Introduction

The linguistic phenomenon of palatalization is not uncommon among the languages of the world. As a speech process involving a secondary articulation or a shift in primary articulation, palatalized sounds are widely present in the phonology of various languages. There exist a number of evidences that this phenomenon serves as a marker of identity in many languages and dialects.

In Arabic, palatalization is known to occur in many dialects, including Cairene (Haeri 1996, Woidich 1999), San'ani (Watson 2002), Baghdadi (Youssef 2013), Moroccan, Bahraini (Holes 1995) and many other dialects of the Gulf, to name a few. Yet, there is a dearth of sociolinguistic works surrounding palatalized sounds in Arabic dialects in general. In Bahraini Arabic, Holes (1995) notes that palatalization of the velar stop [k —> t͡ʃ] in a number of high-frequency words is a feature of the educated, "intercommunal urban dialect," which has merged features of older bedouin and sedentary Bahraini Arabic. The same palatalized velar stop denotes a rural or bedouin identity in Jordanian Arabic, and is not used in the urban, educated 'Ammani variety (Holes 1995). In Baghdadi Arabic, the palatalized /k/ marks a Muslim identity, and is regarded as the prestigious linguistic form (Holes 1995). It is further evident that palatalization of the velar stop has led to the establishment of the affricate [t͡ʃ] as an independent phoneme of Baghdadi Arabic (Youssef 2013). No works on palatalization in other dialects such as Moroccan, certain varieties of Saudi, and the dialects of the Levant exist to my knowledge, although it is widely observed and known that palatalization exists in these dialects.

Recent sociolinguistic works on palatalization in Cairene Arabic have centered on the dental stops /t, d/ and their pharyngealized counterparts /tˤ, dˤ/ (Haeri 1996, Geenberg 2012).

These stops occur in two types of palatalization: "weak palatalization" (hereafter WP) [tʲ, dʲ], and "strong palatalization" (hereafter SP) [t͡ʃ, d͡ʒ], following Haeri (1996) and Bhat (1978). Haeri and Geenberg argue that, in Cairene Arabic, both types of palatalized sounds signal femininеness; however, weak palatalization is associated with upper-classness (Haeri 1996) while strong palatalization carries a lower-class stigma (Geenberg 2012). These findings suggest that the association of palatalization with femininеness in Cairo is an important cue to understanding meaning-making in this speech community.

In addition to the aforementioned dental stops, Geenberg observed in a footnote of her study on strong palatalization that the Cairene coronal nasal may also undergo palatalization (Geenberg 2012, Al-Saqqaf 1999). This observation invoked Al-Saqqaf's descriptive work on Hadramawti Yemeni Arabic (1999), which briefly compared the palatalized /n/ in Hadramawti to that of Cairene, and noted that the palatalized Hadramawti /n/ is not limited to the high-front vowel environment, unlike in Cairene. Al-Saqqaf also mentioned in a footnote, "*n,* which escaped Haeri's attention (Haeri, 1992:171), is also among the consonants that become palatalized in the environment of *i* or *ī* in Eg.Ar. women's speech, e.g. *inti* [inɲtʃi] "you" f.s., *ya'ni* [jæʕɲi] "it means; I mean" (Al-Saqqaf 1999: 95). However, neither of these studies undertook acoustic analyses of the palatalized nasal or explored its social perceptions. Over the course of several years of in-country participation-observation as well as studying films and television, I began to note that not only did the palatalized /n/ occur mainly in the speech of Cairene women, but also that the palatalization of the nasal did not necessarily co-occur with the palatalization of /t, d/. That is, not only did the palatalization of /n/ seem to signal femininity, but it may also be used strategically to convey other meanings.

This thesis presents a pilot study that aims to establish whether or not the palatalized /n/ bears further study as an additional but distinct, socially meaningful variable in Cairene Arabic. It further aims to provide a preliminary look at the social relationship between the palatalized /n/ and /t, d/ & their palatalized variants. I will argue that the palatalized Cairene nasal may refer to a specific kind of femininity that is not captured by the palatalized /t, d/

stops: the stereotype of the *bint dal:u:ʕa* — a spoiled girl or young woman, somewhat parallel to the pampered American "valley girl." The term *bint dal:u:ʕa* is not a new one, though it is not mentioned by Haeri or Geenberg or Al-Saqqaf.

Using a preliminary set of data collected through roughly 10 hours of recordings of native speakers in Cairo, I present here a two-pronged study involving acoustic and impressionistic analyses of the palatalized /n/. Chapter 2 of this thesis provides preliminary acoustic and statistical analyses of [nʲ] that is limited to the syllable-final /ni/ environment. Chapter 3 reviews previous findings on the social perceptions of palatalized /t, d/, and presents the idea of an "expressive posture" or stance that is assumed by Cairene speakers who palatalize these stops (Haeri 1996). This idea serves as a parallel in analyzing the possible motivations behind palatalizing /n/ (further discussed in Chapter 5). This chapter further unpacks some of the ideologies tied to Classical and Modern Standard Arabic, and elaborates on Haeri's finding that palatalization is considered a "nonstandard" sound in Arabic.

Chapter 4 presents a pilot study comparing the relative frequency of palatalized /ni/ in relation to /ti, di/ in a small data pool, with the goal of establishing whether or not palatalized /n/ warrants a larger study of its social salience. This chapter traces the frequency of the palatalized /n/ as well as /t, d/, in terms of percent of the time palatalized, in three speech contexts: reading a short text in Modern Standard Arabic (MSA), narrating daily routines in free speech, and performing the *dal:u:ʕa* stereotype. The first context involving reading a text in MSA tests to what degree /n/ and /t, d/ are palatalized in the most formal speech context found in Arabic, and the free speech context provides a neutral basis for gauging the frequency of these palatalized sounds in free speech in the Cairene vernacular. Furthermore, the *dal:u:ʕa* context tests whether or not there is a correlation between the palatalized /n/ or /t, d/ and the expression of a spoiled, pampered femininity as hypothesized.

The data used in Chapter 4 include 15 participants and a total of 613 tokens, which include the productions of /ni/ and /ti, di/ in all 3 speech contexts by all of the speakers combined. Of the 15 speakers presented in this chapter, 7 were women and 8 were men, all of

whom ranged between the ages of 21-27. Although having a limited age group may present biases in the use of palatalization by a younger group of Cairenes, my personal observations have led me to believe that palatalized /n/ is mainly used by younger speakers. The term *dal:u:ʕa,* which was hypothesized to be associated with palatalized /n/, in itself carries a youthful, "spoiled," meaning that applies to a younger person. However, a larger sample size that includes a wider age range of speakers would be required in a future study in order to test this assumption. Additionally, although social class was tested and concluded to be associated with palatalized /t, d/ (Haeri 1996), social class was not included as a variable in the results and analyses in this study. This is due to the limited number of participants per social class identified (which include lower-middle, upper-middle, and upper classes). However, social class is a variable that may warrant further examination in a future study with a larger and more diverse group of participants.

It is expected that the linguistic ideology behind speaking in Modern Standard Arabic would contrast that of *dal:u:ʕa* speech. This ideology denotes that MSA —a modernized form of Classical Arabic used in the Qur'an— holds a sacred, prestigious status as the most "correct" form of Arabic (Brustad 2015). As Brustad notes, "[t]he contemporary term *al-Fusha* (pronounced "fus-haa") also refers to formal Arabic. The word *al-Fusha* itself means, 'the most elegant [language],' and reflects the continued cultural importance of being able to speak beautifully and correctly" (2015: 22). Thus, MSA represents the most "correct," and proper form of speech, while *dal:u:ʕa* is expected to denote an "incorrect" speech variety. Since previous studies concluded that palatalization represents a "nonstandard" / "incorrect" Arabic variety (Haeri 1996) and that non-palatalized sounds are closer to the "standard" sounds of MSA, I hypothesize that all palatalized sounds will occur less frequently in the reading context when compared to the free speech context. Contrarily, I further hypothesize that speakers will "switch on" the palatalized /n/ in the performed, *dal:u:ʕa* speech, despite any variation in palatalization of the stops and nasal that may occur in free speech.

Chapter 5 hypothesizes that differing ideologies about prestigious, "correct," or "standard" speech forms may be the motivations behind variation in the findings discussed in chapter 4. It further elaborates on the use of palatalized /n/ to project a gendered, socio-economic stance that is akin to the expressive posture discussed in chapter 3. It is hoped that this study will first and foremost shed light on the variation in the production of the coronal and palatalized nasals and stops across young speakers of Cairene Arabic in their early to late 20's. Additionally, it is hoped that this study will provide a basis for which the palatalized /n/ can be further tested for social salience in future studies.

Chapter 2.

Palatalization in Cairene Arabic and Acoustic Explorations of the Palatalized /n/

2.1 The Phenomenon of Palatalization

Palatalization is a complex phenomenon which involves a number of phonological processes. In providing a definition, Kochetov (2011) describes it as "a phonological process by which consonants acquire secondary palatal articulation or shift their primary place towards or close to the palatal region…usually…under the influence of an adjacent front vowel and or a palatal glide" (2011: 1). Upon examining this phenomenon across 64 languages and dialects from 17 languages families and 25 genera, Kochetov describes three main types of palatalization: "secondary," "to a posterior coronal," and "to an anterior coronal." Secondary palatalization refers to the addition of a secondary, palatal articulation without changing the initial place of articulation, such as [p —> p^j]. This type of palatalization is extremely common in the labial, coronal and dorsal places in many languages of the world (Kochetov 2011). The second type of palatalization may result in a shift to a posterior coronal, and may result in a non-sibilant sound, eg. [t, k —> c], or may result in a sibilant sound, eg. [t, k —> t͡ʃ], all of which are also common. The third type of palatalization involves a shift to the anterior coronal and may result in a non-sibilant sound, e.g.. [p, k —> t], which did not occur in any of the languages studied by Kochetov, or may result in a sibilant, eg. [p, k —> ts], which is rare, and [t —> ts], which is common among the languages studied (Kochetov 2011: 6]. Overall, secondary palatalization was found to be typologically most common among the languages examined by Kochetov (2011).

Table 1. Targets and outputs of palatalization (alternations only) and corresponding processes, and their relative frequency in world languages (based on numbers of language families and genera, given in square brackets; see the text for details)

Type	*Palatalization*		*labial*	*coronal*	*dorsal*
I.	Secondary		p → pʲ common [6,9]	t → tʲ common [6,8]	k → kʲ common [6,7]
II.	To a posterior coronal	a. to a non-sibilant	p → c rare [1,1]	t → c common [7,8]	k → c common [4,6]
		b. to a sibilant	p → ʧ rare [1,1]	**t → ʧ common [9,14]**	k → ʧ common [4,7]
III.	To an anterior coronal	a. to a non-sibilant	p → t absent [0,0]	n/a	k → t absent [0,0]
		b. to a sibilant	p → ts rare [1,1]	t → ts common [3,6]	k → ts rare [2,4]

Kochetov 2011: 6

In describing what "triggers" palatalization, Kochetov further noted that "high front /i/ and /j/ are the most likely triggers, followed at a considerable distance by mid front vowels" (2011: 6), as displayed in Table 2. This finding aids in better understanding palatalization in Cairene Arabic, as the triggers seem to follow this pattern (further discussed below).

Table 2. "Triggers of palatalization and their relative frequency in world languages"

Trigger			*Occurrence*
Backness	*Height*	*E.g.*	
front only	**high only**	**i/j**	**common [17,24]**
front only	high & mid	i/j, e/ɛ	common [4,5]
front only	high, mid, & low	i/j, e/ɛ, æ	rare [1,1]
front only	mid/low	e/ɛ/æ	absent [0,0]
front & back	high only	i/j, ɨ/u/w	rare [1,1]
back only	high only	ɨ/u/w	absent [0,0]
back	mid/low	ɑ/ə/o/ɔ	absent [0,0]

Kochetov 2011: 8

2.2 Palatalization in Cairene Arabic

In Cairene Arabic, the palatalization of dental stops and their pharyngeal counterparts have been examined by Bhat (1978) and Haeri (1996). Haeri noted two types of palatalization in Cairene, one of which was termed "weak palatalization" (WP), which involves adding "a secondary palatal articulation to the consonant," leaving the place of articulation unaltered. This is the secondary palatalization described above (Kochetov 2011). The other, termed "strong palatalization" (SP), involves primary palatalization, which shifts the "primary" or initial place of articulation from apical to palatal (Haeri 1996). Haeri's definition of SP concurs with what was described above (Kochetov 2011) as primary palatalization: a shift that results in posterior coronal articulation which goes to a sibilant. In representing the auditory effects, WP in Cairene Arabic can be represented using IPA as [t, $t^{ˤ} \rightarrow t^{ʲ}$], and [d, $d^{ˤ} \rightarrow d^{ʲ}$], while SP can be described as affricates, whereby [t, $t^{ˤ} \rightarrow \widehat{tʃ}$], and [d, $d^{ˤ} \rightarrow \widehat{dʒ}$].

As briefly mentioned in the previous section, weak palatalization in Cairene is triggered when stops are followed by "the palatal glide /j/, long /iː/, and word-final /i/... [and] is not initiated by the phonetically lower word-internal or epenthetic short /i/ or by the long mid vowel /ee/" (Youssef 2013: 246). Strong palatalization, however is triggered by these segments as well as by epenthetic and non-final /i/, which are two lower variants of /i/ (Haeri 1996). The following environments were described by Haeri as the observed conditions for palatalization in Cairene:

Table 3. Phonological Environments for Palatalized Stops in Cairene Arabic

Environment	**Example**
a. [y] glide	**/nadya/** 'female name'
b. [i] (word-final)	**/faaDi/** 'empty'
c. [ii]	**/gidiid/ 'new'**
d. [ɪ] epenthetic	**/ruHt -ɪ- gibt/** '(I) went and bought' (lit. brought)
e. [i] (non-final)	**/tiktib/** 'you write, masc.'
f. [ee]	**/sanateen/** 'two years'
g. other vowels	**/uskutuu/** 'be quiet, plur.'
h. consonant	**/sitt ʔawi/** 'woman very'
i. pause	

(Haeri 1996:51, 58)

Geenberg described the triggers for WP as relevant and similar to that of the palatalized /n/ (2012) that palatalized nasals occur in all of the environments mentioned for WP but not necessarily SP. This helped inform the design of my study, although as will be further discussed in later sections, socially-motivated palatalized /n/ seems limited to the word-final syllable /ni/ in Cairene.

Furthermore, it is worth noting that final [i] in Cairene has several grammatical roles: a noun-derived adjective (eg. *amrika:ni:,* "American"), and the first-person possessive or object pronoun (eg. *ibn-i*, "my son"; *inn-i,* "that I"). Word-final /ni/ may also occur in names (eg. Hanny, Hosni), in other common words such as *ta:ni,* "again," and extends to English words such as "any," and "funny," which commonly occur in the speeches of educated Cairenes.

Additionally, the tables below (Tables 4, 5) present the Cairene consonant phonemes and vowel system. As can be seen, the consonants that have been observed to undergo socially-motivated palatalization thus far center around the dental/coronal place of articulation. As /n/ is a neighboring sound to /t, d/, this further supports that palatalization of /n/ is not unlikely.

Table 4. Consonant Phonemes in Cairene Arabic
*Phonemes in parentheses denote foreign phonemes restricted to loanwords, but that are part of the educated Cairene phonemic system.
*The phoneme [p] is my addition to Youssef's table.

	Labial	Interdental	Dental		Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	[p] | b		t tˤ	d dˤ		k | g	q		ʔ
Fricative	f | (v)		s sˤ	z zˤ	ʃ | (ʒ)	x | ɣ		ħ | ʕ	h
Affricate									
Nasal	m		n						
Lateral			l						
Flap			r (rˤ)						

(Youssef 2013: 22)

Table 5. Cairene Arabic Vowel System

Height	Front Long	Front Short	Final Unstressed	Back Long	Back Short	Final Unstressed
High	i:		i	u:		
Mid	e:	e~ɪ	e~ɪ	o:	o~ʊ	o~ʊ~u
Low	æ:	æ	æ	ɑ:		ɑ

Before presenting my acoustic analyses of palatalized /n/, I will first provide here the acoustic cues used to determining place of articulation of palatalized /t, d/, as they are presented alongside /n/ in my results and analyses. In providing acoustic descriptions of the palatalized stops /t, d, tˤ, dˤ/, Youssef, following Haeri, describes a few key features that serve as cues for a palatalized articulation of these stops. Both have noted that the release of the stop is more gradual with a longer duration of the noise burst between the release of the stop and the following vowel (as per Figure 1, Youssef 2012: 239). Contrarily, this noise burst is much shorter in the production of the non-palatalized [t] (Youssef 2013, Haeri 1996).

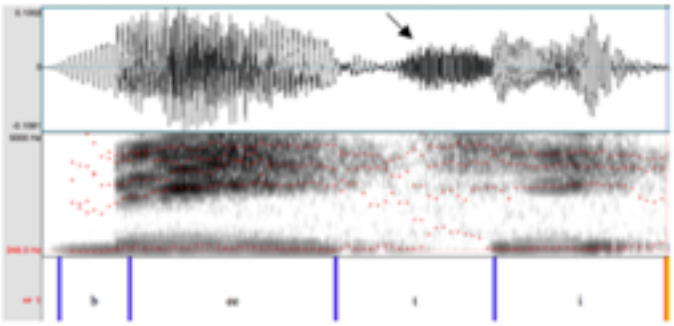


Figure 1. Spectrogram and waveform of the word /beetʲ/ 'my house' demonstrating a palatalized coronal stop [tʲ] before word-final /ʲ/ (38-year-old female speaker of CA)

As acoustic descriptions already exist for the palatalized stops in Cairene Arabic (Haeri 1996, Youssef 2013), this study will focus on the acoustic descriptions and analyses of the palatalized /n/. However, both the stops and nasal will be included in the impressionistic analyses undertaken in Chapter 4.

2.3 Methodology

Acoustic Analyses

Observations on the production of the coronal nasal show that it is commonly realized as palatal and alveopalatal in many languages (Recasens 1990, 2003). Kerdpol (2012) noted the production of palatal /n/ in the phonemic system of a dialect of the Skaw Karen people in Thailand, and Ambrazevicius described the acoustic cues of the secondary palatalization of /n/ in Lithuanian (2010). The secondary palatalization of /n/ also occurs as a phoneme in Russian, and native speakers are found to distinguish between palatalized vs. non-palatalized nasals more easily than they do the oral stop counterparts (Kavitskaya 2006: 12). Other languages noted by Recasens (1982) to contain the palatal /n/ include Czech, German, English, Hungarian, Polish, Italian, and Swedish.

In acoustically measuring the palatalization of this sonorant, F2 in formant transitions have been widely used as a cue to determining place of articulation. In a study comparing the interactive effects of nasal murmurs, transitions, and release as possible cues for place of articulation, Recasens noted that examining formant transitions proved useful in determining the palatal /n/'s place of articulation, while the nasal murmur was not a useful cue for identifying this sound (1983). It should be noted that the F2 transition may not provide a sufficient place cue for other types of nasal. Bilabial and velar nasals, for example, may rely on other features such as the nasal murmur or quality of the nasal release instead of, or in addition to, using F2 as a place cue (Recasens 1983). It is worth mentioning that in examining formant transitions, coarticulation can prove to be problematic, as formant shapes will vary according to the surrounding vowels (Ohman 1966). However, there are evidences that the formants will generally be directed towards the same 'locus' or 'juncture' between the vowel and the sonant. There has also been dialogue which stated that F2 loci are not invariant in natural speech (Fant

1973, Kewley-Port 1982, Lehiste & Peterson 1961, Ohman 1966). To control for coarticulation effects, the data used in describing the palatalized nasal in this study has been limited to the /ni/ syllabic-final environment. However, due to limited tokens available in the target environment, the vowels preceding the /ni/ syllable was not controlled for. In order to further minimize the influences of nearby vowels and other sonants across word boundaries, only tokens produced from reading a word-list are analyzed in this chapter.

In examining CV segments of a palatalized nasal, a higher frequency value at the locus in the palatalized nasal has been observed when compared to the non-palatalized segment in languages such as Lithuanian (Ambrazevičius 2010), Skaw Karen (Kerdpol 2010), Russian, Hungarian, Italian, and Polish (Recasens 1983). These studies inform my methodology, which uses the F2 value at the CV locus as a cue to determining place of articulation of the Cairene nasal. In order to describe a general trajectory of the F2 transition in the /ni/ syllable, I measured F2 at the release of the nasal and at the midpoint of the following vowel. The midpoint of the vowel was determined by dividing the vowel duration in half and obtaining the F2 value at the halfway point.

Participants & Data Collection

Roughly 10 hours of speech gathered from 7 participants were used for the acoustic analyses in this section. They include men and women ages 20-27 who are native speakers currently residing in the greater Cairo area. All speakers were born, raised, and attended schools and universities in Egypt. The socioeconomic classes, evaluated based on their parents' occupations, the neighborhood in which each participant resides in addition to the type of high school and universities they attended (eg. private + foreign language / no foreign language vs. public), ranged from the lower-middle to upper classes.

All speakers were given a list of 40 words written in Arabic script in the Cairene dialect. Of the 40 words, the 20 target words contained the dental/alveolar nasal preceding the high-front vowel in the word-final /-ni/ environment. This was the environment in which

palatalization was most clearly heard, and serves as a starting point in doing preliminary acoustic measurements, which can be expanded to other environments in future studies. Since these recordings were initially collected for the purpose of generating a guise or perception test aimed at native speakers' ability to distinguishing between palatalized and non-palatalized /ni/, the rest of the other 20 words were simply filler words, containing either the nasal in various environments, or no nasals at all. Among the filler words, 5-6 tokens containing the nasal in the /-na/ word-final environment were produced, as well as 3 nasals in the word-medial /-ne-/ environment. Due to the shortage of phonetically consistent tokens available, only the nasals in the word-final /-ni/ environment will be analyzed, yielding a total of 138 tokens across all 7 speakers, or ~20 tokens per speaker. Furthermore, although the effects of coarticulation are controlled for by limiting acoustic measurements to words ending in syllable-final /ni/, the shortage of data prevents me from controlling for vowels preceding the /ni/ segment.

Participants were recorded in quiet spaces that were appropriate to the context of Cairo, and therefore took place in either my home or the participant's home, or in a meeting room rented out at a local cafe. The speakers were recorded using the Zoom H1 Recorder (48 kHz) with external lapel microphones (SP-CMC-2), which they were instructed to hold 5-10 inches from their mouths while reading the word-list off of a sheet of paper.

For this study, the frequency of F2 was obtained for the 138 tokens mentioned in 2 places: one point at the juncture of the nasal-vowel transition (ie. the beginning of the transition from the nasal murmur into the following vowel), and another point at the midpoint of the same vowel (in its steady state). This method follows Gibson (2007) and Sussman et al. (1991) who found that comparing the formant transition between these two points served as a useful cue in distinguishing a palatalized sound from a non-palatalized one.

Statistical Analysis

In analyzing the differences between the nasal production of my speakers, linear regressions were used to test the relationship between F2 values at the 2 above-mentioned

points: the onset of the vowel (ie. CV juncture) and the mid-vowel point in the CV transition. The vowel onset was measured at 1-2 wave cycles into the vowel, while the mid-point was determined by locating the halfway point of the steady-state duration. The dependent variable is the F2 value at the onset of the vowel (or the CV juncture), while the predictor is the F2 at the mid-vowel point. The values of interest from regression analyses include the slope, r-squared, and the p-value as well as the t-value. The slope will indicate the trajectory of the formant transition from the vowel onset into the mid-vowel state (Gibson 2007, Sussman et al. 1991). The r-squared values display how well the regression line fits the values observed, and the p-value along with the t-value tell us the significance of the correlation between the F2 values at the 2 points mentioned.

In visualizing the relationship of these values, the 2 F2 frequency values were plotted in order to display the relationship between the height of the formant at the juncture/onset of the vowel against the formant height at the midpoint of the vowel. The x-axis will represent the midpoint of the vowel, and the y-axis will represent the CV juncture at the beginning of the transition.

Following Sussman et al. (1991), it is expected that the slope of F2 transition of the palatalized /n/ into the following high-front vowel [i] will be flatter as compared to the coronal

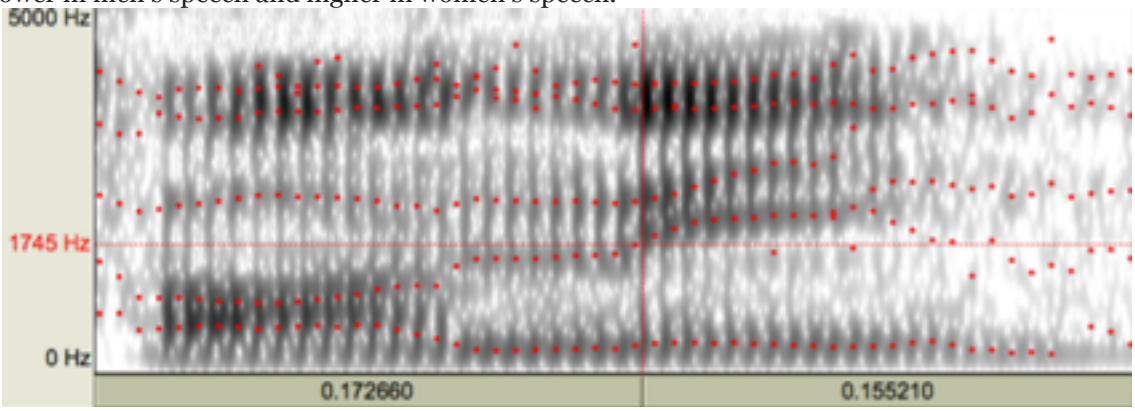
/n/. This expectation stems from the fact that the F2 value at the vowel onset of the palatalized /n/ should be higher than that of the coronal /n/. As both types of nasal are followed by the vowel [i], there should be less difference between F2 at the vowel onset and the mid-vowel point in the palatalized nasal, whereas a greater different between the two values is expected in the coronal nasal. The formant transition in the coronal nasal is expected to have a steeper, upward slope into the mid-vowel state. Additionally, the p-value should indicate significance in the F2 values of the coronal nasal, but little to no significance in the palatalized nasal.

2.4 Results

Spectrographic Analysis

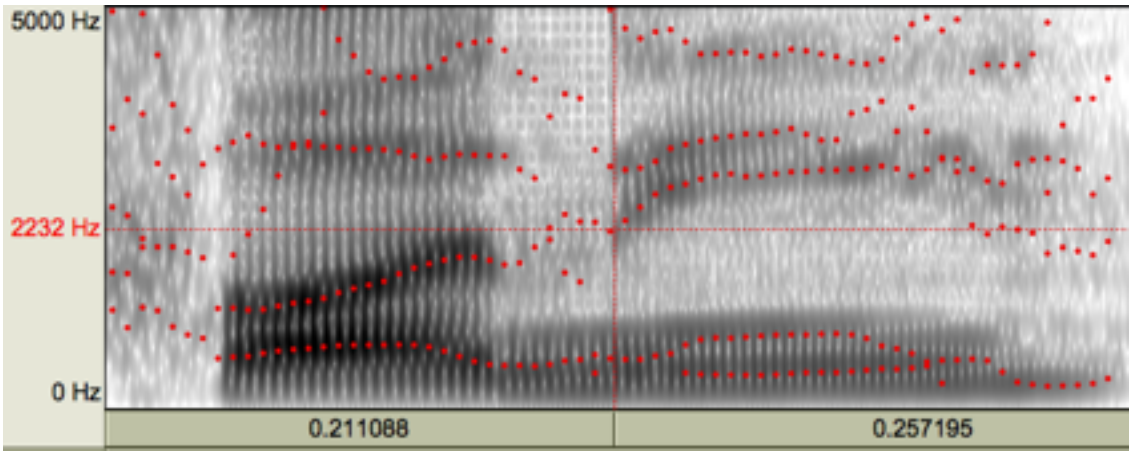
The following spectrograms show the vowel onset point in F2 (marked at the point where the two red perpendicular lines intersect) at the juncture of the /n/ and /i/ segments. In a non-palatalized /n/, this point begins at a lower frequency and then rises into the mid-vowel state, which is located directly above the /i/ transcription in the spectrograms displayed. In a palatalized /n/, however, the vowel onset is visibly higher and 'goes straight into' the /i/ vowel - displaying little to no transition, as there is little to no change in height. This is a reasonable finding, as palatalized sounds contain acoustic qualities of a glide, similar to a high vowel, so when it is surrounded by /i/, one would expect that both sounds would be produced at similar frequencies.

Figure 2. Male speaker: non-palatalized
The intersection of the red perpendicular lines mark the vowel onset or CV juncture, which represents the beginning of the vowel transition. F2 value (around 1745 Hz here) was obtained at this point. The mid-vowel state is located directly above the transcription "i," and F2 was further obtained at this precise point for statistical analyses. Note that vowel onset in non-palatalized spectrograms are lower than palatalized ones. Further note that frequency values are generally lower in men's speech and higher in women's speech.



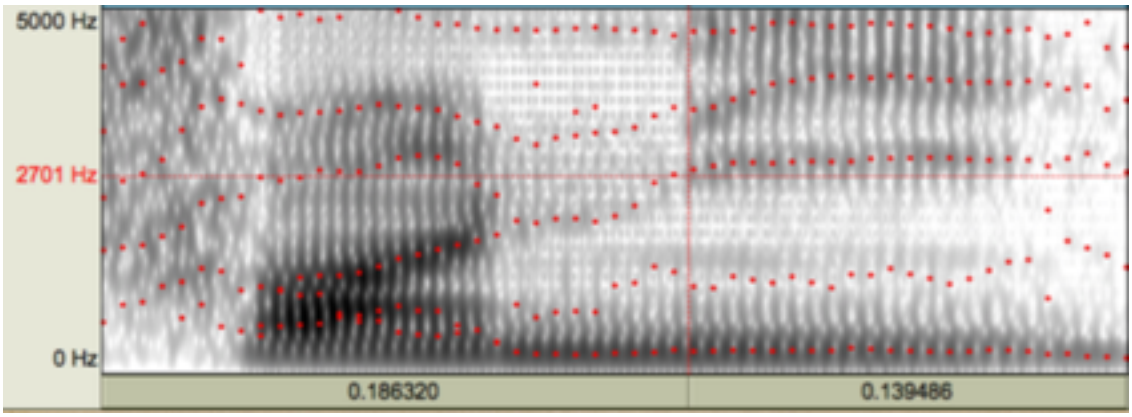
f a n i

Figure 3. Female speaker: non-palatalized



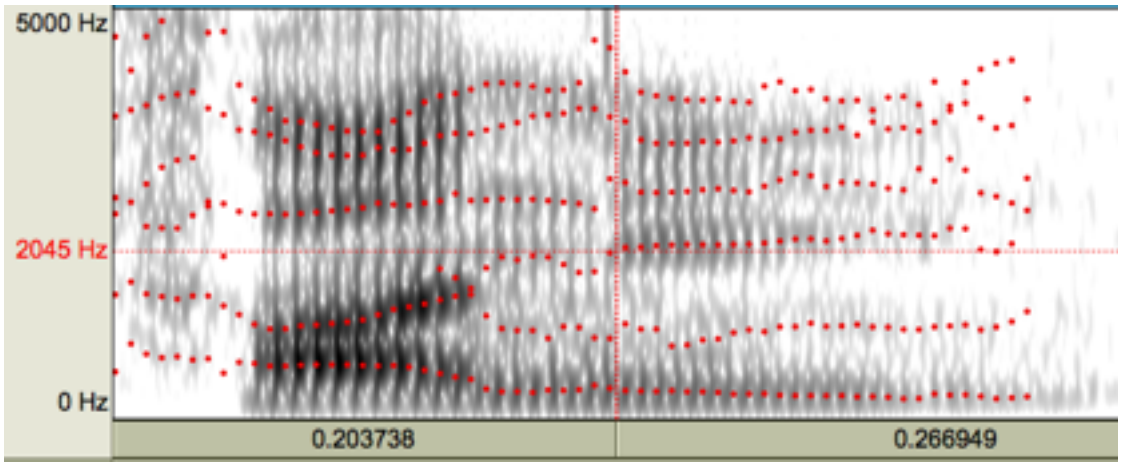
f ɐ n i

Figure 4. Female speaker: palatalized



f ɑ n^j i

Figure 5. Male speaker: palatalized



f ɐ n^j i

Regression Analyses

As discussed under the section "Statistical Analyses," the logic for employing linear regressions for analyzing formant values lie in the linear relationship between the vowel onset point and the mid-vowel point of a formant (Sussman et al. 1991). The slopes produced in linear regressions based on these two points mimic the formant transitions displayed in spectrograms. F2 values at the onset of the following vowel were plotted against the F2 at the mid-vowel point, in order to distinguish between co-articulation and articulation. Linear regressions were run for each speaker in the /-ni/ word-final environment. The tables and figures below demonstrate the current results using regular regression models. Table 6 shows the slope and the p-values, which can be used to compare the production of /-ni/ across participants.

Overall, the slopes ranged from 0.51 to 1.85, with the exception of Speaker 3, whose F2 values need further examination. The highest slope values of the male participants are higher

than the highest slope values of the females recorded, although the lowest slope values among the males are currently lower than that of the females recorded (unless Speaker 3's values prove otherwise after her values are reviewed). This generally displays a clearer coronal place of articulation among men (with higher slopes) than among women (with lower slope values). This point is further explained under discussions.

Auditory observations led me to expect that speakers 2, 5 and 6 would have the clearest, non-palatalized production of /n/, while the other speakers tend to highly co-articulate or palatalize their nasal production in the high, front vowel environment. This in fact proved to be the case when the slope values are examined, with Speaker 2's slope of 1.08, with a borderline-significant p-value of 0.06 and a t-value of 1.93, and Speaker 5's slope of 1.52, with a significant p-value of 0.005 and a t-value of 3.17. Similarly, Speaker 6's slope is 1.85, with a significant p-value of 0.001 and a t-value of 4.80.

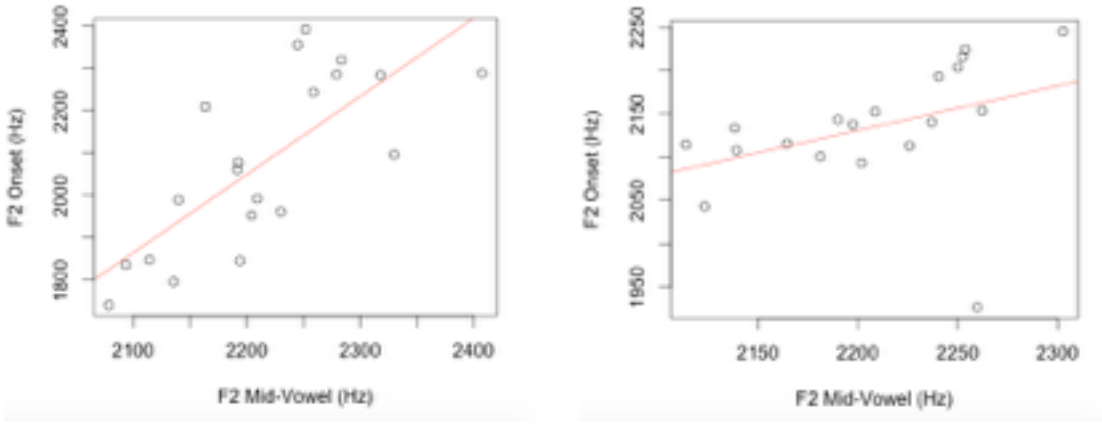
Contrarily, those with the lowest (flattest) slope values (not counting Speaker 3, whose formant values may need further evaluations) include Speaker 1 among the females, with the slope of 0.49 and an insignificant p-value of 0.15, with a t-value of 1.49. Similarly, Speaker 7 has a slope of 0.51 and also a non-significant p-value of 0.15, with a t-value of 1.71. It can be said that my impressionistic observations are roughly borne out, but pending further exploration with a larger pool of data.

Table 6. Comparison of linear regression values for F2 at vowel onset and mid-vowel point in /-ni/ environment across all participants. A higher slope value represents a less or non-palatalized articulation. A lower slope value shows a production that is more likely to be palatalized. P-value shows whether or not the points surrounding the best-fit line are significantly related, with a significant p-value (and higher T-value) signifying coarticulation, and an insignificant p-value showing palatalization

Speaker	Gender	Slope	T-value	P-value	*Auditory Quality	n
1	F	0.49	1.49	0.1559	Palatalized	18
2	F	1.08	1.93	0.06 .	Non-palatalized	20
3	F	-0.017	-0.041	0.97	Non-palatalized	21
4	M	0.53	2.32	0.03	Semi-palatalized	19
5	M	1.52	3.17	0.005 **	Non-palatalized	19
6	M	1.85	4.80	0.0001 ***	Non-palatalized	20
7	M	0.51	1.713	0.10	Palatalized	19

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
*Auditory Quality are based on my impressions and spectrographic observations

Figure 6. Participant 6 (left, non-palatalized) and Participant 7 (right, palatalized): F2 values at Onset vs. Mid-vowel /-ni/. Note that the figure to the left (Participant 6) shows a normal coarticulated production of the coronal /n/, with a steeper slope. The figure to the right shows a flatter slope that displays a palatalized production of /ni/.



2.5 Discussion

This section provides interpretations of the values presented under Results (above). In examining the p-values, there appears to be a general pattern of no significance in the speeches of those who palatalized /n/, and a significant p-value in the non-palatalized /n/. Among the men, the speakers with the audibly non-palatalized nasal (Speakers 5, 6) showed a stronger

significance in their p-values than the ones who sounded palatalized. This is also the case among the women, since Speaker 2's p-value yields more significance than that of Speaker 1, who audibly palatalized the nasal while Speaker 2 did not. The significant p-value displays the presence of coarticulation in the speeches of non-palatalizers, while the insignificant p-value indicated a different (palatalized) place of articulation.

When the slope values of the speakers are examined, we are able to further gain meaningful information about the place of articulation — which is expected to be either palatalized or coronal in this study. Previous studies (Gibson 2007, Sussman 1999), show that the slope of a palatalized consonant is expected to be flatter than that of a non-palatalized consonant in its transition from the (vowel onset) into the mid-vowel state. A slope of 1 would display 'perfect' coarticulation of the consonant with the following vowel, so we can expect that any 'normal,' non-palatalized nasal would have a greater transition from the juncture of consonant-vowel to the mid-vowel state. Contrarily, a palatalized consonant would produce a flatter slope, since onset values start at higher frequencies, and there would be less steep of a transition into the following high-front vowel, and values are thus more similar at the consonant-vowel juncture and the mid-vowel point.

In the syllabic-final /ni/ environment, the speakers with audibly semi- or fully palatalized nasals (Speakers 1, 4, 7) had lower slopes (between 0.50-0.65) than those who audibly did not palatalize. Therefore, a higher or steeper slope indicates a less palatalized or coronal articulation, whereas a lower or flatter slope indicates a more palatalized or less coronal articulation. As noted, Speaker 3's formant values need further examination, but her production of /n/ was audibly coronal as far as I was able to perceive.

2.6 Summary

As hypothesized, there is preliminary acoustic evidence that the coronal nasal in Cairene Arabic is palatalized in the speeches of some speakers before the high-front vowel [i]. Furthermore, this variation is apparent in the two general patterns of transition discussed: a

flatter versus a steeper slope of formant transitions, which showed a linear relationship between the F2 at the vowel onset and at the mid-vowel point in the /ni/ syllable. The flatter slope values generated from regression analyses generally matched what sounded audibly palatalized in the speeches of my speakers, while the steeper slope indicated a non-palatalized /n/. Although not enough data was elicited for statistical analyses of the nasal in the other phonetic environments, these preliminary findings at the very least support the palatalization of /n/ in the /ni/ environment.

CHAPTER 3.

Palatalization, Social Perception, and Expressive Posture

3.1 Previous Work on Social Perceptions of Palatalization in Cairene

This chapter provides an overview of previous works on the social motivations behind palatalizing the Cairene stops, their status as "standard," "prestigious," or "nonstandard" when Modern Standard Arabic is taken into consideration, and the concept of *bint dal:u:ʕa,* "spoiled rich girl," is discussed. Haeri demonstrated in her work (1996) that palatalization in Cairene Arabic is an innovation of upper-middle class women, and that weak palatalization [tʲ, dʲ] preceded strong palatalization [t͡ʃ, d͡ʒ]. WP is assumed to have been present and widespread as a socially salient sound in the speech of Cairene speakers before SP. Haeri further hypothesized that palatalization in Cairo was a "change in progress" whereby SP – the variant most associated with and used by lower-middle class women – is replacing WP (Haeri 1996, 109). I interpret this to mean that palatalization seems to be a variable that carries social meaning, but (or perhaps therefore) it is a variable that shifts. This foreshadows that palatalization may be in search of a new vessel to express social meaning.

Haeri hypothesized that SP contained *blue collar*, *tough* and *urbane* connotations (1996). Geenberg tested this hypothesis over 20 years later, and found that SP was strongly stigmatized with ideas that rendered its male and female speakers "less wealthy, educated, confident and so on than non-palatalizing men and women." (2012) This finding holds that many Cairenes attach strong ideologies to SP, which include "lower-classness," "improper speech," "flirtatious women," and "non-masculine men" (Geenberg 2012). Geenberg's study showed that younger women are more likely to use SP strategically to sound more flirtatious, "girly" and "cutesy," and that it is more frowned upon when produced by men. Therefore, SP contains both feminine and lower-class social values at the same time (Geenber 2012), whereas WP contains feminine and cosmopolitan, upper-class values. It is clear that femininess

manifests itself in multiple forms, and that there there are different types of femininenes associated with palatalization.

Palatalization as an 'Expressive Posture' of the Feminine, Upper-Class

In explaining the underlying reasons for differences in palatalization, Haeri expanded on Labov's concept of the *expressive posture* in order to elaborate on gender differentiation in speech. She posited that sexual differentiation of speakers is a product of a certain expressive stance or "posture," that seems socially more appropriate for one sex than for the other (Labov 1984: 304). Differentiation is not based on just "physical differences alone, or of different amounts of referential information supplied by speakers," (Labov, 1984). Eckert notes that there may be *iconic values* attached to some of these variables that are used in creating an expressive posture (1989). Haeri posited that palatalization contains the "female" iconic value (1996). Whereas iconic values represent a type of shared beliefs between languages for certain processes, expressive postures are the result of using certain sounds that contain these iconic values.

In Piercean terminology, iconicity may refer to the sign or linguistic aspect which "resembles the referent in some characteristic," or the relationships of certain linguistic aspects which "mirror the relationships of their referents" (Haiman 1980, Duranti 1992). When there exists systematic indexicality, whereby the ideologies of a particular group indicate that a particular linguistic phenomenon denotes a certain contrast among the social groups indexed, then indexicality may give rise to iconization (Irvine and Gal 2000), or to the formation of iconic values. Haeri's work suggested that palatalization in Cairene may be undergoing this process (1996).

Haeri examined the phenomenon of iconic values in a study of ten speech communities. She found that the majority of "fronting" processes among 19 phonetic variables examined (palatalizing being one of them) are led by women, while most "backing' processes are led by men (1996). Although not intended to serve as a global explanation, this finding aids in better

understanding the role of iconicity in the meaning-making process with regards to palatalization. Haeri generalized that fronting has the iconic value: 'female' while "backing" has the iconic value: 'male.'

Fronting applies to the palatalization of Cairene stops, which includes the forward shift in articulating the palatalized pharyngeal [tˤ] and [dˤ]. Although palatalization of the coronal nasal implies the addition of a palatal articulation that may appear contradictory to a fronting process, the heightening of the F2 formant in palatalized /n/ suggests that some fronting is involved, at the very least at the release of the nasal. The idea of an expressive posture through fronting of palatalized stops /t, d/ may aid in better understanding the potential motivations behind palatalizing /n/ in Cairene.

3.2 Palatalization: Standard or Non-standard Arabic?

As a portion of this study involves examining the production of palatalization in the context of reading a consent form written in Modern Standard Arabic (MSA), it is necessary to unpack some of the ideologies that will later serve in analyzing the production of palatalized sounds in this context. Firstly, referring to Modern Standard Arabic, Haeri in her work uses the term "Classical Arabic," as her participants did not refer to this variety in any term that translated to MSA. To clarify the contemporary variety used in a component of this study, I will use the term "Modern Standard Arabic" or "MSA" instead of Classical Arabic.

Secondly, when discussing the ideology surrounding this Classical or Modern Standard variety, Haeri used the term "il luɣa il ʕarabiyya" ("the Arabic language"). As Haeri found in her study, "il luɣa il ʕarabiyya," was viewed by Egyptians as:

> the highest linguistic norms of the society, while ʕ*ammiyya* [colloquial dialect] cannot match it in its "beauty," "power," and "correctness..." In addition, the overwhelming prescriptive norms of Classical Arabic make speakers fearful of making mistakes, and therefore discourage them from using it. (Haeri 1996: 223)

In discussing prestige, Haeri explains that Classical Arabic or MSA belongs to a different category than the prestigious norm that coincides with affluent status and social class in Cairo. She further discusses evidence which reveals that what is considered 'prestige' or affluence that are indexed by the upperclass Cairene city life is not necessarily the same type of prestige held by Arabic speakers with regard to Classical Arabic (1996). Haeri mentions a survey on language attitudes in Lebanon conducted by Nader in 1962, which found that a variety of ceremonial recitations in Classical Arabic recorded by rural speakers elicited very positive reactions when played to groups of urban listeners (1996: 223). It was concluded that the fact that Classical Arabic represents "the highest linguistic norms does not have to do with the fact that these norms are found in the speech of 'affluent' speakers" (Haeri 1996: 223).

In explaining the status of weak palatalization of stops, Haeri argued that WP denotes a "non-standard" form of Arabic. while the non-palatalized forms denote a "standard" variety that is closer to Classical Arabic (1996: 101). She further noted that the "social differentiation in the use of palatalization and the fact that the spectrum of its variants only involves Cairene Arabic demonstrate it to be a stylistic resource of Cairene Arabic" (Haeri 1996: 101). That is, Cairenes use weakly palatalized stops to demonstrate a cosmopolitan, urbane quality that signifies upper-classness. This finding, along with the aforementioned study on Classical Arabic, displays not only different notions of what is considered "standard," but also what is considered "prestigious." Ibrahim (1986) noted that a clear distinction needs to be maintained between "standard" and "prestigious" forms, and argued that equating one with the other suggests that there can only be one highly valued variety of Arabic. It is thus important to recognize that multiple ideologies of prestigious linguistic forms exist in Cairene, and that equating palatalization with "nonstandard" does not render it non-prestigious. Furthermore, the seemingly widespread use of palatalized stops among speakers today begs the question of whether or not there is only one "standard" variety —ie. the non-palatalized sounds associated

with MSA— in Cairene Arabic. This points to the fact that it may be inappropriate to prescribe a "standard" or "nonstandard" status for Arabic dialects at all.

Chapter 4. A Study of Palatalized /ni/, /ti, di/ Across Three Speech Contexts

4.1 Palatalizing /ni/ to "sound *dal:u:ʕa*"

In previous attempts to explain the use of the palatalized /ni/ in Cairene Arabic through observations from films and popular TV series, preliminary findings led me to believe that the phenomenon of *dal:u:ʕa* may provide an explanation. As no scholarship exists to provide a shared definition of the *bint dal:u:ʕa*, the traits discussed in this paper are compiled through interviews with my participants, friends, and through personal experience of having lived and observed the phenomenon in Cairo, Egypt.

The immediate responses from many Egyptians to the equation of what it means to be *dal:u:ʕa* include: a general lack of responsibility, femininess, and/or a privileged status denoting elitism. A *bint dal:u:ʕa* (*dal:u:ʕa "*girl") is someone characterized by an ultimate childlike femininity, and oftentimes, upper-classness, not necessarily in a positive sense, although it could be used to mean "sweet" or "cute". To be *dal:u:ʕa* is a result of having grown up in an affluent household, or to have been showered with affection and privilege that does not necessarily require monetary wealth. Nonetheless, to be *dal:u:ʕa* is an appropriate trait for any girl to moderately assume. The term is oftentimes translated in English as "spoiled," ie. with material goods, or with love and affection, and with the expectation of being treated like a child.. If a man is called *dal:u:ʕ*, the connotation is negative and he is regarded as a *si:s* "a man who acts like a woman." In the Egyptian context, a *dal:u:ʕ*, man would possess the same characteristics as a *dal:u:ʕa* girl, and he would be perceived as irresponsible, and/or foreign and belonging to the upper class. With the hypothesis in mind that palatalized /ni/ may be used to express these spoiled, *dal:u:ʕa* qualities, this study aims to further explore palatalization in this context. This chapter traces the variation of the palatalized /ni/ in relation to /ti, di/ in the

speech of 15 speakers across three contexts, and determines whether or not this sound is a candidate that bears further study as a socially salient variable.

4.2 Data and Methodology

Participants in the study were recruited through my personal network in Cairo. A total of 15 participants were surveyed, including 7 women and 8 men between the ages of 21 and 27, all of whom are native speakers of the Egyptian vernacular. The backgrounds of participants ranged from lower-middle to upper classes, which was determined by the neighborhood in which they resided, what kind of high school and universities they attended, whether or not they spoke other languages and how well, and the occupations of their parents. The neighborhoods in which my participants resided included Shobra and Imbaba, which are well-known lower-income neighborhoods, Dokki, Helwan, and Maadi, which are popular among middle-classes, and Zamalek and New Cairo/Heliopolis, which are well-known upper-class neighborhoods. The distribution of my participants can be roughly categorized as belonging to a household of the following classes:

Upper Class: Speakers 1, 3, 4, 8

(Upper-)Middle Class: 2, 9, 10, 11, 12

Lower-Middle Class: 5, 6, 7, 13, 14, 15

Due to the limited number of participants in this study, socio-economic background will not be discussed at great lengths, but is displayed to demonstrate the variety of speakers and possible factors that may interfere with iconic values and productions of palatalization in their speeches.

Participants were recorded using the same equipment described in section 1, and were recorded with 3 types of speech contexts in mind. Firstly, they were recorded reading the consent form used to grant permission to conduct this study. This form is a one-paragraph text

written in Modern Standard Arabic. Next, speakers were recorded using 'free speech,' which includes talking generally about their backgrounds, daily routines, hobbies, and other generally related, routine topics. Next, keeping in mind the possibility that *dal:u:ʕa* qualities may trigger palatalization of /ni/, speakers were asked to 'act out' a *dal:u:ʕ/a* boy or girl, in addition to supplying any definitions for the phenomenon. A context used in eliciting tokens containing /ni/ was prescribed for the acting, and involved the following scenario:

> You are an employee who is *dal:u:ʕ/a*, and you have done something wrong to upset or annoy your boss, Mr. Hosni. Act out how you would confront Mr. Hosni about the incident, and reassure him that you will not repeat the mistake again.

In setting up this scenario, I had hoped that at the very least 2 tokens would be elicited in the /ni/ environment, through the name Hosni, and taani which means "again." Palatalization has been noted to occur in both words through previous observations in films and television. In interacting with my participants, I kept my speech palatal-free in the /ni/ environment, but not necessarily in the /ti, di/ environments.

With the hope of investigating the use of palatalization as a "unmarked" or "prestigious" marker in relation to gender, I compare the production of the palatalized /ni/ and /ti, di/ in the 3 speech contexts described: reading, free speech, and performed speech. It should be noted that although reading a text could represent a kind of performance, the term 'performed' speech in this study refers to the scenario which involves acting *dal:u:ʕ,* while 'reading' refers to reading aloud the consent form in MSA. Aside from the reading context, all other speech types are carried out in Cairene Arabic (also referred to as "Egyptian Vernacular" in this study). Some English was used in performing *dal:u:ʕ/a* speech.

4.3 Results

Table 7. Total number of participants who palatalized across 3 speech types

Reading				Free speech				Performed			
n	**G**	**/ni/**	**/ti, di/**	**n**	**G**	**/ni/**	**/ti, di/**	**n**	**G**	**/ni/**	**/ti, di/**
7	**F**	3	6	7	**F**	5	7	**5**	**F**	3	5
8	**M**	1	4	**8**	**M**	4	4	**6**	**M**	0*	4*
15		**4**	**10**	**15**		**9**	**12**	**11**		**3**	**9**

G = Gender | n = total number of participants | *Some participants did not produce any tokens (see Tables 8, 9).

Results across all participants in the 3 examined speech types (reading, free speech, and performed) reveal varying usage of the palatalized dental stops and nasals. Table 7 displays an overview of the total number of participants who palatalized /ni/ or /ti, di/ by gender. The total amount of participants include 7 women and 8 men in the reading and free speech contexts, totalling 15 participants (shown under "n"). The column "G" represents gender. The performed speech included a smaller number of participants (5 women and 6 men), as some of the participants refused to perform the *dal:u:ʕa* stereotype, or simply did not produce any palatalized tokens (further elaborated on below under Discussions).

In the reading context, 3 women and 1 man palatalized /ni/ while reading, but a higher number of participants --6 women and 4 men-- palatalized /ti, di/ in the same context. As can be seen in Table 7, the general trend shows both men and women palatalizing stops more so than the nasal. However, more women palatalized both the nasal and dental stops than men. The following sections present the degree to which each participant palatalized /ni/ and /ti, di/ in terms of percent of the total amount of tokens palatalized (also displayed in Tables 8 & 9).

Reading a text in Modern Standard Arabic

Overall, both male and female participants palatalized /ni/ and /ti, di/ to some extent when reading in Modern Standard Arabic. However, it should be noted that palatalization of dental & pharyngeal stops /ti, di/ were relatively "light" and resembled aspiration more than palatalization for Speakers 4, 7, 8, 9, and 10 (Table 8, below). To err on the conservative side, these speakers will not be counted as palatalizers in the results and discussion sections.

Both men and women who palatalized /ti, di/ had precisely the same frequency range of 12-87.5%, and those who palatalized /ti, di/ most frequently (25% of the time or more) include 4 women and 3 men. In general, about the same number of men and women palatalized /ti, di/ more than 25% of the time. However, in examining those who produced any amount of palatalized token at all (ie. any percentage above 0%), it is found that more women (7 speakers) palatalized /ti, di/ compared to men (4 speakers).

Similarly, the nasal /ni/ was palatalized by women more so than men when reading in Modern Standard Arabic, with 3 women and 1 man palatalizing this sound (Table 8). The frequency range for both women and men who palatalized /ni/ is either 0% or 100%, as there are only 2 tokens and both were either palatalized or not palatalized by the speakers. There was some uncertainty for Speaker 7 in one of the two tokens, but to err on the conservative side, this token was not counted. It is interesting to note that those who palatalized /ti, di/ frequently (beyond 25%) did not necessarily palatalize /ni/ when reading (eg. Speakers 3, 11, 13). For example, Speakers 3 and 11 palatalized /ti, di/ 50%-87% of the time but neither one palatalized /ni/ when reading. It should be noted that no speaker palatalized /ni/ without palatalizing /ti, di/.

Table 8. This table displays palatalization of /ti, di/ in terms of percent of the time palatalized in all 3 speech contexts. “n” refers to the total number of tokens produced in each context. E.g. Speaker 1 produced 15 tokens in the /ti, di/ environment in free speech, and palatalized 100% of these tokens (i.e. all tokens observed were palatalized).

Speaker	Gender	Reading	n Reading	Free Speech	n Free Speech	Performed	n Performed
1	F	87.5%	8	100%	15	83.33%	6
2	F	0%	8	46.67%**	15	--	--
3	F	50%	8	100%	15	100%	2
4	F	12.5%**	8	46.15%	13	83.33%	6
5	F	25%	8	100%	19	100%	2
6	F	50%	8	100%	24	--	--
7	F	37.5%**	8	58.82%	17	100%	4
8	M	12.5%**	8	0%	11	--	--
9	M	25%**	8	40%**	10	50%	2
10	M	50%**	8	27.27%**	11	100%	2
11	M	87.5%	8	92.3%	13	--	--
12	M	0%	7	16.67%	24	100%	3
13	M	42.86%	7	40.90%	22	0%	1
14	M	14.29%	7	0%	5	0%	3
15	M	57.14%	7	33%	6	100%	2

n = total number of tokens
**very lightly palatalized and resembles aspiration compared to others

Table 9. This table displays palatalization of /ni/ in terms of percent of the time palatalized in all 3 speech contexts. “n” refers to the total number of tokens produced in each context. E.g. Speaker 1 produced 15 tokens in the /ni/ environment in free speech, and palatalized 46.67% of these tokens in the conservative observation (meaning that any uncertain / unclear tokens were not counted). However, if the uncertain tokens that sounded possibly palatalized were counted, then Speaker 1 palatalized 73.33% of the time in free speech. “lib” = liberal observation. Asterisks mark uncertainty to whether or not token was palatalized.

Speaker	Gender	Reading	n Reading	Free Speech	n Free Speech	Performed	n Performed
1	F	100%	2	46.67% (73.33% lib*)	15	0%	1
2	F	0%	2	0% (7.69% lib*)	14	0%	2
3	F	0%	2	0% (9% lib*)	11	50%	4
4	F	0%	2	30% (50% lib*)	10	80%	5
5	F	100%	2	40%	10	33.33%	3
6	F	100%	2	82.60%	23	100%	2
7	F	0% (50%*)	2	11%	9	0%	2
8	M	0%	2	16.67%	6	100%	1
9	M	0%	2	0%	6	0%	6
10	M	0%	2	0%	7	--	--
11	M	0%	2	11.76%	17	--	--
12	M	0%	2	6.67%	15	0%	1
13	M	0%	2	0%	8	0%	6
14	M	0%	2	0%	13	0%	2
15	M	100%	2	31.25%	15	--	--

n = total number of tokens
lib = liberal observation | *uncertain / unclear spectrogram

Free Speech in Egyptian (Cairene) Colloquial

In free speech, both men and women palatalized /ni/ and /ti, di/. Overall, the women palatalized both types of sound more frequently than the men did, and the palatalization of /ti, di/ remains more common among both genders than /ni/. For those who palatalized /ti, di/,

the frequency of palatalization ranged from 46-100% of the time for women, and from 16-92% for men. 6 women and 3 men palatalized /ti, di/ 25% of the time or more (these figures include the "light" palatalizers noted in Table 8). For /ni/, the frequency of women who palatalized ranged from 11-82.6%, while values for the men who palatalized ranged from 6-31.25%. However, 4 women and only 1 man palatalized /ni/ beyond 25% of the time. As can be seen, the range and frequencies of palatalization are comparable for both men and women in the /ti, di/ environment, but is much lower for men in /ni/, displaying more frequent use of /ni/ by women in free speech. Palatalization of /ni/ is more common among women than men in free speech.

Performed speech - dal:u:ʕa

Following the trend described in the previous 2 contexts, the number of men and women who palatalized /ti, di/ are similar in performed speech. Frequency ranged from 83-100% of the time for women, and 50-100% for men. However, only one male speaker palatalized /ni/ in the performed context, while 4 women palatalized this sound. Due to the small number of tokens produced, the frequency for both men and women were 0%, 50%, 83.33%, or 100%, with no gradients in between. Additionally, 3 of the men did not produce any tokens in either the /ni/ or /ti, di/ environment, and some refused to act as *dal:u:ʕa* when asked, or produced so little speech that no token in the phonetic environment required were not produced. One woman did not produce any /ti, di/ sound (Speaker 6), but this was due to chance/digression in speech and not a refusal to act *dal:u:ʕa*. Speaker 2 chose to speak mostly English with a few words in Arabic, in the attempt to imitate "AUCians" (notoriously affluent, privileged upper-class women who attended The American University in Cairo), whom she described as the prime example of a *bint dal:u:ʕa*.

4.4 Discussions

/ti, di/ & their pharyngeal counterparts

The results in Table 8 display that palatalizing /ti, di/ and their pharyngeal forms is not uncommon for the majority of the speakers, as compared with /ni/. All speakers except for 2 (Speakers 8 and 14) palatalized the dental stops in free speech. It should be noted that although both men and women palatalized the dental stops, some of the speakers (4, 7, 8, 9, 10) --as noted with asterisks in Table 8 — palatalized very lightly as compared with the other speakers, and these productions are audibly more similar to aspiration than palatalization, so they will be discussed as non-palatalized. Some 'switching off' or 'toning down' of this palatalized consonant may be evident during reading, as portrayed by Speakers 2, 4, 7, and 12), but the 'switching on' of clear palatalization during reading is generally not displayed except by Speaker 14, who palatalized only 14% of the time. Thus, there is more evidence among this population for speakers turning 'off' palatalization when reading than the converse.

A look at /ni/ across speech contexts

As the results show, there is variation in the production of /ni/ in relation to /ti, di/. Those who palatalized /ni/ in free speech did not necessarily palatalize in any other speech context. However, those who palatalized in any other context generally palatalized in their free speech as well. There is some systematic evidence that readers tend to 'switch off' palatalization when reading the text in Classical Arabic. This is seen in the speech of Speakers 4, 8, 11, 12 (and possibly also Speakers 2, 3, and 7 in the liberal observation), which shows that both genders make this switch. Although the number of tokens produced in the /ni/ environment includes only 2 instances in the reading context, there appears to be evidence that the switching off of palatalization in reading is not accidental. Firstly, it is apparent that frequency of the palatalized /ni/ in men's free speech is quite low (Speaker 11: 11.76% of the time, n=17; Speaker 12: 6.67% of the time, n=15, Table 8). We might say that this low frequency would naturally yield little to no palatalization in the reading context, since the palatalized /ni/ rarely occurs in free

speech when n = 15-17, so in the reading context where n = 2, the absence of palatalization would appear quite natural. However, when we look at the speech of the women (Table 9), Speaker 4 palatalizes 30% (or 50% in the liberal observation) of the time in free speech, and none of the time when reading. Speaker 7 (also female) palatalizes 11% of the time, but also does not palatalize when reading. It appears that despite the higher frequency of /ni/ in free speech of one speaker than the other, both did not palatalize when reading in Modern Standard Arabic. Contrarily, Speakers 1, 5, 6, 15 palatalized both in free speech and when reading (Table 9). With a closer look at each speaker's palatalization frequency, it appears that all 4 speakers palatalized between 33%-82.60% in free speech, and 100% when reading. Those who palatalized at least 30% of the time appear to be choosing to either switch palatalization 'on' or 'off'. This "switch" is further discussed in terms of "expressive posture" in the next chapter.

Chapter 5. Differing Ideologies and Ideas of Prestige

Data from the 15 participants in this study show that not only is there variation in the use of palatalization in the speakers' speech in different contexts, but there is also evidence that the speakers hold different ideas about prestige and what is considered the "standard" variety of Arabic in the Cairene context. Although nearly a third (5) of the (15) speakers displayed a tendency to 'switch off' the palatalized /ni/ when reading a text in Modern Standard Arabic, nearly a third (4) of the others also retained this sound in both contexts. The other third (6) of the speakers did not palatalize in either context. Speakers who definitely did not palatalize in either context (given both conservative and liberal observations) also did not palatalize /ni/ in the performed context, which may tell us something about these speakers' rather 'conservative' language posture.

In all cases, the palatalized /ni/ occurred in free speech and across a higher number of speakers than it did in the other two contexts. Although this may be due to chance or low numbers of tokens, the results presented above show that there is some evidence suggesting ideology-motivated use (or lack of use) for the palatalized /ni/ sound. About equal numbers of men and women 'turned off' the palatalized /ni/ when reading, which may be caused by strong ideology about "Classical Arabic," as mentioned by Haeri. However, palatalization of the dental stops /ti, di/ remained present and frequent in the speech of women in the reading context, and men who palatalized in a similar manner as the women (ie. true palatalization rather than aspiration) also kept this sound when reading. Haeri hypothesized and found in her study that weak palatalization was an innovation of women from the upper classes, and that palatalization was a sound change in progress, whereby strong palatalization was replacing WP among the younger speakers (1996). Aside from one instance in the reading speech of one male speaker (Speaker 15), none of the 15 speakers observed in this study used strong palatalization, although this may be due to the limited number of speakers and range in socio-economic backgrounds.

In performing *dal:u:ʕa* speech, all but one of the 5 speakers who kept the palatalized

/ni/ sound in both their performed and free speeches were women. Although my analysis is limited to the population examined in this paper, my findings are consistent with the norms surrounding the *dal:u:ʕa* stereotype. A few men hesitated a great deal before agreeing to 'act out' someone *dal:u:3*, and some did not do so at all. Those who complied after some hesitation spoke so little that they did not produce any tokens in the needed phonetic environment, while others who 'got into character' without much hesitation spoke in the same tone and style as what they described as a *dal:u:ʕa* girl or woman.

It is true that my data does not display that all participants systematically palatalized /ni/ in performed speech, and that there are in fact a few speakers who actually 'switched off' this sound in this context. However, the evidence that those who did not palatalize very frequently in free speech (eg. less than 50%) but who chose to palatalize very clearly in performed speech cannot be ignored. At least 3 speakers (2 women and 1 man) fall under this category. Although the socioeconomic background of each participant was not included in the results, it is at the very least an interesting coincidence that the 3 mentioned speakers who seemingly 'switched on' palatalized /ni/ when acting *dal:u:3(a)* were from the upper classes and attended AUC or GUC[1] - two of the most elite private universities in Cairo. The only two other AUCians among the participants (Speakers 1 & 2) did not palatalize in performed speech, although one of the 2 speakers did not palatalize /ni/ in her speech in any context and mostly spoke English when performing. Another set of female participants (Speakers 5, 6) who are sisters from a lower-middle class family palatalized in all 3 contexts.

Although seemingly chaotic, the aforementioned variation in the usage of palatalization may represent a form of "negotiation" of meanings for this varyingly used sound, and may represent different ideologies behind the 'appropriate' use of palatalization (Haeri 1996, Eckert and McConnell-Ginet 1992). While some speakers deem it inappropriate to palatalize /ni/ when reading a text in Modern Standard Arabic, others may consider it a marker of education and/or

[1] AUC - The American University in Cairo | GUC - German University in Cairo. These two universities are frequented by some of the wealthiest elites of Cairo (and other Arab & foreign nationals who travel to study there), although a number of less privileged students are provided scholarships to attend as well.

social class. Yet, the finding that not everyone who palatalizes /ti, di/ palatalizes /ni/ points to a need for further exploration of the uses of the latter sound.

Further, in finding that the use of palatalized /ni/ transcends the standard-MSA vs. nonstandard-vernacular binary, my study supports Haeri's claim that Cairene Arabic in "itself has a 'standard' variety so that variants of palatalization are 'standard and 'non-standard'" (Haeri 1997: 101). However, whereas Haeri claimed that palatalized forms were non-standard while non-palatalized forms were standard, at the very least in her findings in 1996, I hypothesize that palatalized /ti, di/ may be moving towards becoming the "standard" norm both in Cairene and MSA Arabic. This hypothesis stems from the observation that most of my participants palatalized /ti, di/ when reading the consent form in MSA, as well as in all other contexts far more than they did /ni/. As to relating my findings to the dialogue on the use of palatalization as an expressive posture of gender, the "switching on" of the palatalized /ni/ in *dal:u:ʕa* speech may at the very least support the hypothesis that the palatalized nasal is an expressive posture more appropriate for women in the Cairene context. It is worth further exploring whether or not the palatalized /ni/ could serve as a new marker for a certain type of femininenes, as the palatalization of /ti, di/ becomes more and more widespread in the speech of men in addition to the speech of women.

6. Conclusions

It can be concluded that in general, those who palatalized the nasal /ni/ in Cairene Arabic only did so if they were already palatalizing the dental and pharyngeal stops /ti, di/. It was also observed that those who palatalized both /ti, di/ and /ni/ did not necessarily do so at the same frequency. Palatalization of /ni/ is generally less frequent or nonexistent in the speeches of those who palatalized /ti, di/. And while the palatalization of /ti, di/ differ in their auditory qualities, and tended to sound less 'bursty' in the speech of several men compared to the women, this sound is still produced across a majority of both men and women, unlike the palatalized nasal. The presence of the palatalized /ni/ mainly in the speech of women in this study raises the question of whether or not this sound could serve as a 'new,' unstable marker that is still undergoing negotiation in terms of gender and identity. Furthermore, the fact that palatalized /ti, di/ seem to be widespread in the speeches of both genders across all contexts, including when reading a text in MSA, indicates that palatalized stops may actually be regarded as the "prestigious, unmarked" form in Cairene Arabic today. This study concludes that the palatalized Cairene /n/ bears further study in its social meanings.

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